BASIS FOR THE AMENDMENT

Claim 5 has been amended as supported by Claim 7.

Claim 7 has been amended as supported by Claims 2 and 1 as originally filed.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1-15 will now be active in this application.

INTERVIEW SUMMARY

Applicants wish to thank Examiner Kruer for the helpful and courteous discussion with Applicants' Representative on August 21, 2007. The data of the Examples in the specification were discussed. The Examiner requested a detailed explanation to be included in the response.

REMARKS

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

NOTE Claims 1 and 5 are argued separately.

The present invention as set forth in **Claim 1** relates to a sheet, comprising:

a resin composition comprising

an elastomeric styrene polymer,

component (B1),

component (B2), and

component (B3),

in a mass ratio of elastomeric styrene polymer to the total amount of components (B1), (B2) and (B3) of from 98/2 to 80/20;

wherein said elastomeric styrene polymer comprises

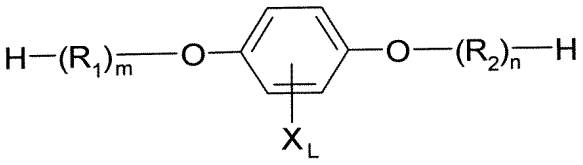
(I) from 40 to 95 parts by mass of a continuous phase of a copolymer comprising from 20 to 80 mass% of styrene monomer units, from 80 to 20 mass% of (meth)acrylate monomer units and from 0 to 10 mass% of units of other vinyl monomers copolymerizable with such monomers, and

(II) from 60 to 5 parts by mass of a dispersed phase of a graft copolymer having from 20 to 90 parts by mass of graft branches of a copolymer comprising from 20 to 80 mass% of styrene monomer units, from 80 to 20 mass% of (meth)acrylate monomer units and from 0 to 10 mass% of units of other vinyl monomers copolymerizable with such monomers, grafted to from 10 to 80 parts by mass of an elastomer,

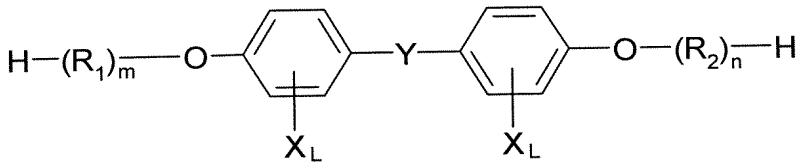
wherein the volume average particle size of the dispersed phase is from 0.1 to 0.6 μm, and the difference in the refractive index between the continuous phase and the dispersed phase is not more than 0.05;

wherein component (B1) is an aminocarboxylic acid having at least 6 carbon atoms, a lactam, or a salt of a diamine with a carboxylic acid, having at least 6 carbon atoms;

wherein component (B2) is at least one diol compound selected from the following chemical formulae (1) to (3):



(1)



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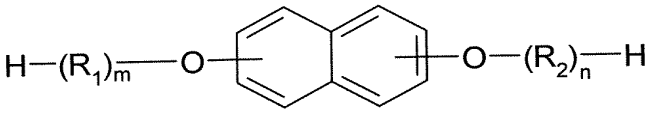

(3)

wherein R_1 is an ethylene oxide group, R_2 is an ethylene oxide group or a propylene oxide group, Y is a covalent bond, a C_{1-6} alkylene group, a C_{1-6} alkylidene group, a C_{7-17} cycloalkylidene group, a C_{7-17} arylalkylidene group, O, SO, SO_2, CO, S, CF_2, $C(CF_3)_2$ or NH, L in X_L is an integer of from 1 to 4, and each of m and n is an integer of at least 16; and

wherein component (B3) is a polyether ester amide having a C_{4-20} dicarboxylic acid copolymerized.

In contrast, Auclair (US 5,932,655), Ueyama (US 5,284,884) and Ueda (US 5,886,098) fail to disclose or suggest sheets as claimed, having the **claimed mass ratio of**

elastomeric styrene polymer to the total amount of components (B1), (B2) and (B3) of from 98/2 to 80/20; wherein the volume average particle size of the dispersed phase is from 0.1 to 0.6 μm, and the difference in the refractive index between the continuous phase and the dispersed phase is not more than 0.05;

Auclair does not disclose or suggest the use of components (B1), (B2) and (B3) in the claimed mass ratio. There is nothing in the disclosure of Ueda or Ueyama suggesting that some of the starting materials remain in the final product as stated by the Examiner. In addition, superior results of the present invention are shown in the Examples.

The sheet of the present invention is excellent in productivity and can give a formed product excellent in transparency, impact strength and recycling properties.

The importance of volume average particle size of the dispersed phase is from 0.1 to 0.6 μm and the difference in the refractive index between the continuous phase and the dispersed phase of not more than 0.05 is discussed staring at page 9, line 25 to page 10 of the specification. The volume average particle size and the claimed difference in the refractive index are important to achieve superior impact strength and transparency.

In addition, the claimed proportion of elastomeric styrene polymer to the total amount of components (B1), (B2) and (B3) of from 98/2 to 80/20 is important to achieve superior antistatic properties while maintaining an excellent impact strength. See paragraph bridging pages 13 and 14 of the specification.

Notably, when proportions outside the claimed scope are used, impact strength, haze, forming properties are inferior. See Examples 1-3 and Comparative Examples 1 and 2 in Tables 2 and 3 at pages 26 and 27 of the specification.

Regarding **Claims 1-4**, embodiments falling within these claims are disclosed in **Examples 1-3** of the specification. See pages 25-28 of the specification.

As described in "BACKGROUND ART", it is an object of the present invention "to provide a sheet excellent in transparency, impact strength, antistatic properties, etc., and a formed product such as an electronic component packaging container, employing such a sheet", by employing a resin so-called "transparent ABS".

Therefore, Claim 1 defines a sheet made of a MBS resin composition comprising components (B1-B3). **Examples 1 to 3** include the features of Claim 1. **However, Example 4 and subsequent examples do not.**

Table 3 at page 27 of the specification shows data for Examples 1-3 (embodiment of Claims 1 to 4):

Example 1: a single layer sheet

Example 2: a 3-layer sheet of which surface layers having 12% of component (B)

Example 3: a 3-layer sheet using component (D) for a substrate layer

(Component (D) St: MMA: n-BA: SB copolymer=55: 34: 5: 6 (parts by mass))

Comparative Examples 1 and 2 compare the single layer sheet of **Example 1** having a smaller amount of component (B) and having a larger amount of component (B). (See Table 2 at page 26 of the specification.) **Comparative Examples 1 and 2** demonstrate that the surface resistivity is high in the case of the small amount of component (B), and that the impact resistance is low in the case of the large amount of component (B), such being not applicable for practical use.

Regarding Examples 1 to 3, the specification describes at page 28, lines 1-6 that it is possible to obtain a sheet excellent in transparency and having **antistatic properties**, by mixing a polyether ester amide to a resin component. (In Example 4 and subsequent examples, antistatic properties are not mentioned.)

Further, Claim 4 defines the structure of MBS of the substrate layer in the multilayer sheet (component D).

Amended Claim 5 is independent and does not depend from Claim 1. Claim 5 relates to a multilayer sheet, which comprises:

a substrate layer of an elastomeric styrene polymer comprising from 1 to 20 parts by mass of a dispersed phase of an elastomer comprising from 30 to 50 mass% of styrene monomer units and from 70 to 50 mass% of butadiene monomer units, and from 99 to 80 parts by mass of a continuous phase of a polymer comprising from 35 to 75 mass% of styrene monomer units and from 65 to 25 mass% of (meth)acrylate monomer units, and

a surface layer of a styrene polymer comprising from 35 to 75 mass% of styrene monomer units and from 65 to 25 mass% of (meth)arylate monomer units, **formed on each side of the substrate layer;** and

wherein the total thickness of said multilayer sheet is from 50 to 2,000 μm, and the thickness of the surface layer is from 3 to 20% of the total thickness.

In contrast, Auclair (US 5,932,655), Ueyama (US 5,284,884) and Ueda (US 5,886,098) fail to disclose or suggest a sheet as claimed in Claim 5 having **a substrate layer**, and **a surface layer**, **formed on each side of the substrate layer;** and **wherein the total thickness of said multilayer sheet is from 50 to 2,000 μm, and the thickness of the surface layer is from 3 to 20% of the total thickness.**

It is an object of the present invention is to obtain a multilayer sheet comprising a substrate layer and a surface layer, which are made of different MBS resin compositions respectively, from which a transparent sheet which is excellent in transparency after vacuum forming can be obtained.

Claim 5 defines the structure of MBS of the substrate layer and the surface layer. (Claim 6 defines the "styrene polymer" in Claim 5.)

Namely, the present invention includes multilayer sheets each comprising a substrate layer and surface layers (both surfaces) having a different structure (Claims 5 and 6) as specifically explained in Examples and Comparative Examples.

Further, as described in "INDUSTRIAL APPLICABILITY", the main effect obtained by the above multilayer sheet is "to obtain a transparent sheet which is free from deterioration in the appearance (transparency) even when subjected to vacuum forming and which is excellent in physical strength and excellent in economical efficiency and recycling properties". See page 41 of the specification.

The above effect can be obtained for the first time by the specific resin compositions of the surface layers and the substrate layer of the present invention as claimed in Claim 5.

The following is a detailed explanation of the examples of the specification as they relate to Claims 5 and following:

Tables 6 and 7

Example 4: standard example for a multilayer sheet comprising a substrate layer and surface layers of Claim 5 (Result: particularly excellent in transparency and impact test after vacuum-forming).

Example 5: one embodiment of Claim 6, which is an example employing an elastomeric styrene polymer (P1) on one surface layer.

Example 6: The same example as in Example 4 except that the surface layer is rich of MMA (Result: Fogging on the recycled sheet was observed a little, but it is within tolerant level).

Examples 7 and 9: The same example as in Example 4 except that the thickness is different.

Example 8: The same example as in Example 4 except that the material of the substrate layer is different.

Comparative Example 3: The same example as in Example 4 except that the sheet comprises only a substrate layer i.e. no surface layer (Result: poor in transparency after vacuum forming).

Comparative Example 4: Example 8 except that the sheet comprises only a substrate layer i.e. no surface layer (Result: poor in transparency after vacuum forming).

In a case where an elastomeric styrene polymer is on the surface layer, fogging is observed on the surface of a formed product by vacuum forming. It is considered that fogging is attributable to the difference of the refractive index between the surface side and inside which is caused by deformation of elastomer particles in the vicinity of the surface side, etc. at the time of vacuum forming.

Comparative Example 5: A case where a surface layer is too thick. (Result: Poor on folding test).

Comparative Example 6: A case where a surface layer is made of PS (Result: No recycling property).

Comparative Example 7: A single substrate layer containing no elastomeric styrene polymer (Result: Deficient in transparency and impact test after molding).

Tables 8 and 9

Examples 10 to 12 are examples to examine forming properties and transparency of carrier tapes formed by using sheets having the same structures as in Examples 4, 6 and 8 and the total thickness of 0.3 mm. In each example, forming properties and transparency were remarkably excellent. Further, Example 13 employs carrier tapes of which surface layer is rich of MMA. In Example 13, a carrier tape having a small total thickness was excellent.

Comparative Examples 8 and 9 are examples for a single layer sheet made of an elastomeric styrene polymer, and it was poor in transparency due to the same reason as in Comparative Example 7.

Comparative Example 10 is an example for a sheet made of styrene copolymer which is not rubber modified, and it was poor in transparency. The reason is not clear, however, it might have been caused by craze, since a hard resin was stretched forcibly.

In summary, the sheets of Examples 4 to 9 (Table 6 on page 38 of the specification) are superior in productivity and, when formed into cups by vacuum forming, give cup shaped products superior in transparency, impact strength and recycling properties, to the sheets of Comparative Examples 3 to 7 (Table 6 on page 39 of the specification).

The sheets of Examples 10 to 13 (Table 8 on page 40 of the specification) give, when formed into carrier tapes by air-pressure forming, more transparent carrier tapes than the sheets of Comparative Examples 8 to 10 (Table 9 on page 41 of the specification).

Such superior properties are not disclosed or suggested by Auclair, Ueyama and Ueda.

Therefore, the rejection of Claims 1-15 under 35 U.S.C. § 103(a) over Auclair (US 5,932,655) in view of Ueyama (US 5,284,884) and Ueda (US 5,886,098) is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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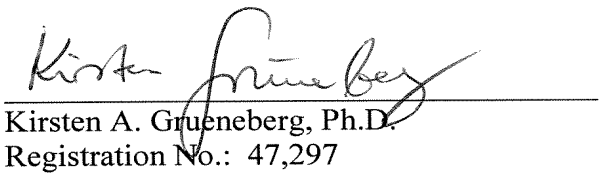
MAIER & NEUSTADT, P.C.
Norman F. Oblon



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